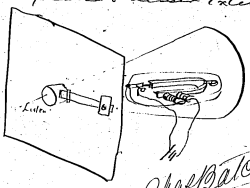
1878. Voltameter (NS-78-012)

Numbered pages 1-22, which precede the other notes and drawings, were copied into Experimental Researches, Vol. 4, pages 175-192. The first page in this series seems to relate to an acoustic device rather than to the voltameter.

June 21 1878
T. A. Edison

Narrow aperture leading from a Continuous Source of Sound & Expansion of trouble
J. Kennedy
Martin Ford
Closer aperture to greater & lesser extent



Chas Batchelor

The slot may be the same as a speech escape and may be opened & closed by a magnet galvanometer needle etc or by a strip derived motion from a diaphragm, having a Concentrator piece =

Personally appeared before me this day of 18 , the said Thos. A. Edison, Chas. Batchelor, John Kruesi, and Martin Ford, and acknowledged the above to be their signatures

Notary Public.

Copied on page 175 Bk 11 Corp Records
Nov 6, 1878
W Cannon

Sonorous Voltameter Aug. 22, 1848.

J. Ahrens

Edwa

Chas Batchelor

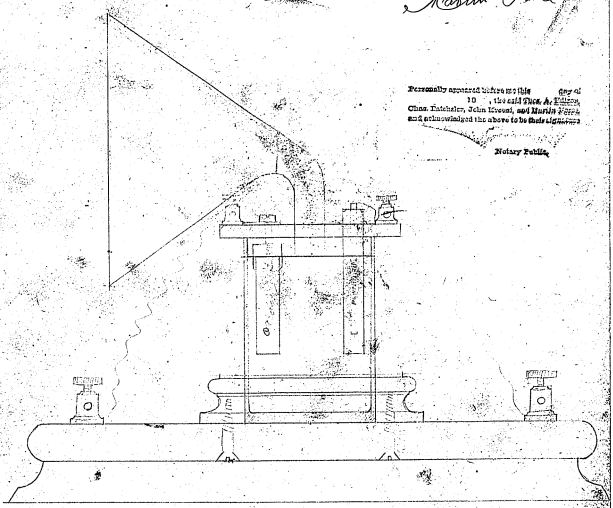
Martin Force

Copied on p. 78 Vol 4 Est Resources Corp. 1879

Wm Carman

Personally appeared before me this day of 10 , the said Thos. A. Edison, Chas. Batchelor, John Howell, and Martin Force and acknowledged the above to be their signatures

Notary Public



Voltameter
Edison's

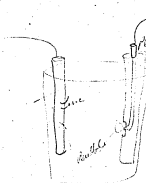
Aug 29 1878 3

Chas Batchelor
Johnson

Mill. Instrument made so.

J Adams
Marion M Pierce

on Strap



1 Drop released in 10 seconds
1 " " " 12 "
1 " " " 13
1 " " " 14
1 " " " 14
1 " " " 14 1/2
1 " " " 16 1/2
1 " " " 14 1/2
1 " " " 14 1/2
1 " " " 14 1/2
1 " " " 14 1/2
1 " " " 13 1/2
1 " " " 13
1 " " " 13
1 " " " 12 1/2
1 " " " 12 1/4
1 " " " 14 1/2
1 " " " 16 1/2

Personally appeared before me this day of 18 and made oath, As to Marion M Pierce, Chas. Batchelor, Chas. Kramer, and Martin and acknowledged the above to be their signatures

Notary Public.

3 cells carbon 1/2 in

13 1/2

Johnson Jan 17 1877
Eck Pierce Dec 5 1875
Johnson

After this we put in circuit 100 ohms
1 drop in 12 1/2 seconds

Now 30 ohms in circuit
1 drop in 16 seconds
1 " " 13 seconds

Voltameter (continued) Aug 29 1898

Chas Batchelder
Jas Edwards
Martin Force

With one hundred ohms in circuit

1 Drop in 16½ seconds
1 Drop " 16½ "
1 Drop in 17½ "
1 Drop " 16½ "
1 Drop " 15¾
1 " " 16 –
1 " " 16¾

With 200 ~~ohms~~ ohms

1 Drop in 20 seconds
1 " " 20¾ "
1 " " 19¾ "
1 " " 19¾ "
1 " " 20 "

With 400 ohms in

1 Drop in 27 seconds
1 Drop in 26½ seconds

With 600 ohms in

1 Drop in 34 seconds
1 " " 34 seconds
1 " " 34¼ seconds

With 1200 ohms in

1 Drop in 54¾ sec
1 " " 53½

Personally appeared before me this day of 10 , the said Thos. A. Edison, Chas. Batchelder, John Howard, and Martin Force, and jointly acknowledged the above to be their signature.

Notary Public.

7
7
6
8
10
12

86·4
11

55
42
97

24
22
62
12

86·4
24
648

Entered on page 114 vol. U. Exp. Book
Aug. 9. 1898
To Committee

Voltameter continued

With 2400

1 drop in — 86½ seconds

1 drop in 87 sec

With 4800 ohms in

1 drop in 139 sec

With 9600 ohms in

1 drop in 254½ sec

1 " 245

1 " 251

Chas. Batchelor
T. A. Edison
J. Huneau
Morum Force

Personally appeared before me this date Chas. Batchelor, T. A. Edison, J. Huneau, Morum Force and made oath that the above is to the best of their knowledge and belief a true and correct statement.

Witness my hand this 19th day of Oct. 1879

Chas. Batchelor

16 : 20
16 50 : 70 : 54 00
16 | 6

900 : 00
34 : 14 86½
34 | 3 00 | 4 54 | 139
4 54
3 00
1 54
1 00
54
54
00

Before me, Jerome B. Rosencrantz
Oct. 19, 1879
Co. Commr.

On Strips	Mean	13½
10 ohms		12½
30 ohms (mean)		14½
100 " (mean)		16½
200 "	mean	20
400	"	26¾
600	"	34
1200	"	54
2400	"	86½
4800	"	139

Voltameter

With 600 ohms in

T A Edison
Johnson
Martin Force

1 Drop in	30	sec
1 " "	31	sec
1 " "	32	sec
1	33 1/4	sec
1	33 1/4	sec
1	34	sec
1	33 1/2	

34
7 0 2

Starter too soon

34 | 2 4 8 | 7
34 | 168 | 4
136
32

Put in one Carbon cell + 600 ohms

1 Drop in 168 seconds

Nearly 5 times as long as with 3 cells
probably due to polarization + tension (Investigate)

56 | 100 | 100
56 | 1600 | 30
100
100
56 | 130

1 Drop in 164 3/4 seconds

Put in Callaud cell in 600 ohms

1 Drop in 12 minutes 7 1/2 seconds —

Confined on P. 150 Vol. I
Exp. Measurements on Voltaic

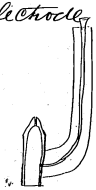
Good night
T A Edison
Charles Batchelor

Edison's
Voltameter.

Aug 21st 1878

Chas Batchelor
J Kruesi
T A Edison
Martin Force

This is the boss way for the gas to come from the electrode



No the pressure will always vary much
Chamber — PB

Personally appeared before me this 18 day of the said Thos. A. Edison, Chas. Batchelor, John Kruesi, and Martin Force, and acknowledged the above to be their signatures

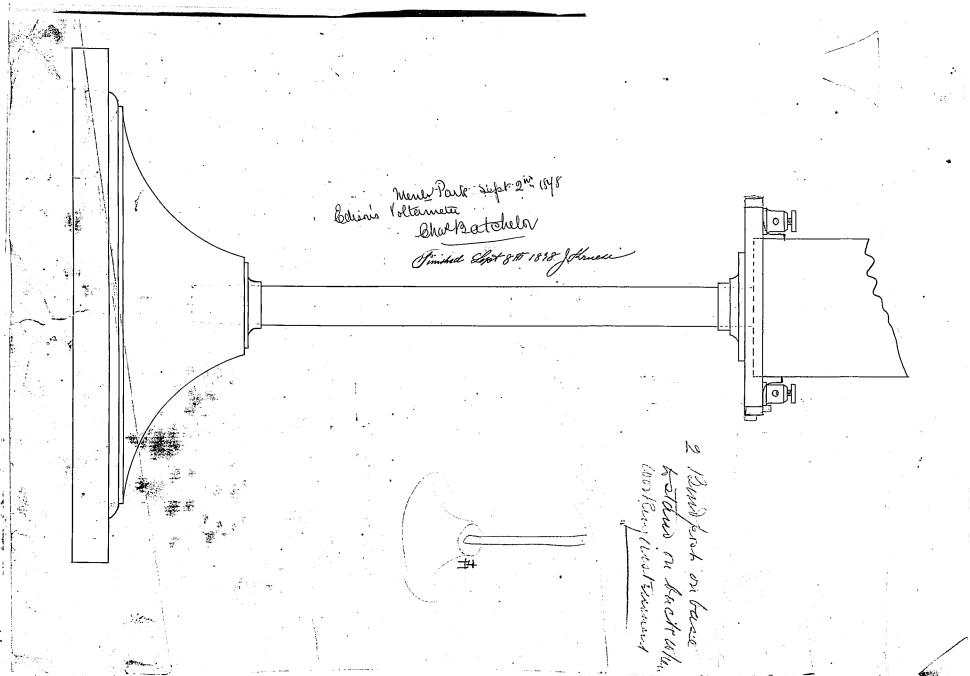
Notary Public.

Lost sight of for 100 years it Exp Recently
Dec 9 1996 W Conman

Unbound Notes and Drawings, 1874-1878

1878. Voltameter (NS-78-012)

[This page probably precedes the document on Reel 7, Frame 940.]



Buckeye Vallinsulin Sept 13. 1878 8

Time; 3 cells called and shut ok

HO4HP.

T. A. Edison

Chas Batchelor

J. Krusi

Martin Force

Personally appeared before me this
13 day of Sept 1878 the said Chas. A. Batchelor, John Krusi, and Martin Force and acknowledged the above to be their signature

Notary Public.

6¾
6¼
6¼
6
6¼
6¼
6¼
6¼
6¼
6¼
6½
7½
fine bubbles commence to rise between large bubble
hence the oscillation
Closed part of the hole up to
prevent the above
6
6
6
5½
5½
5¾

Copied in page 18 Vol 4 C.H. Roman
Sept 9, 1879 T.W. Coleman

Voltameter Continued Sept 13. 78

T A Edison

Chas Batchelor

J Kruesi

Martin Force

5 3/4
6
6
6
6
6
6 5 1/4
6 5 1/4
6 5 1/4
6 5 1/4
6 5 1/4
6 5 1/4
6 5 1/4
6 5 1/4
5 1/4
5
5
5 1/4
5 1/4
5 3/4
5 3/4

Copied on p 182 Vol 4 Exp Researches Dec 9. 1878 W Mason

5 3/4
6 {Extra small bubble between this & last one}
5 3/4
5 3/4
5 3/4
5 1/4
5 1/2
5 3/4
5 3/4
5 3/4
5 3/4
5 3/4
5 3/4
5 1/2
5 3/4
5 3/4
5 3/4
5 3/4
5 3/4
5 3/4
5 3/4
5 3/4
6 Extra Bubble between this & last
5 3/4
5 3/4
5 3/4
5 3/4

Personally appeared before me this 13 day of , the said Thos. A. Edison, Chas. Batchelor, John Kruesi, and Martin Force, and acknowledged the above to be their signature

Notary Public.

10

Bubble Voltameter
Continued

Sept 13. 78

T. A. Edison
Chas Batchelor
J Kruesi
Martin Force

Copied on P. 183. Vol 4 Exp Records Nov 9. 1878

Meaning

5 3/4 Sec
5 3/4
5 3/4
5 3/4
5 3/4
6
6
6
6 1/4
6 1/4
6 1/4
6 1/4
6 3/4
7 1/4
7 1/4
5 1/2
5 1/4
5 1/4
5 1/4
5 1/4
5 1/4
5 1/4
5 1/4

} Observe this bubbles again closed up the hole little

5 1/4 Sec
5 1/4
5 1/4
5 1/4
5 1/4
5 1/4
5 1/4
5 1/4
5 1/4
5 3/4
5 3/4
6
6 1/2
6 1/2
6 1/2
6 3/4
6 3/4
6 3/4

See over

Personally appeared before me this day of 18 , the said Thos. A. Edison, Chas. Batchelor, John Kruesi, and Martin Force, and acknowledged the above to be their signature

Notary Public.

T A Edison
Chas Batchelor
J Kruesi
Martin Force

Personally appeared before me this day of 18 the said Thos. A. Edison, Chas. Batchelor, John Kreusi, and Martin Force, and acknowledged the above to be their signature

Notary Public.

Copied on page 184 Vol 4. Exp Researches Oct 9 1880 McCarney

6 3/4 Secs

Observe small bubbles escaping from hole in paper

Make hole in paper smaller small bubble stop.

6 3/4	4 3/4	
6 3/4	5	5 3/4
6 3/4	5	5 3/4
6 3/4	5	5 1/4
6 3/4	5	
6 3/4	5	5 1/4
6 3/4	5	5 1/4
6 3/4	5	5 1/4
6 3/4	5	5 1/4
6 3/4	5	5 1/4
6 3/4	5	5 1/4
6 3/4	5	5 1/4
6 3/4	5	5 1/4
4 3/4	5	5 1/4
4 3/4	5	5 1/4
4 3/4	5	5 1/4
4 3/4	5	5 1/4
4 3/4	5	5 1/4
4 3/4	5	5 1/4
4 3/4	5 1/4	5 1/4
4 3/4	5 1/4	5 1/4

56 102

Bubble Voltameter Sept 13 78 12

continued

T A Edison

Chas Batchelor

J Kruesi

Martin Force

4 1/4	4 1/2
4 1/4	4 1/4
4 1/4	5
4 1/4	4 3/4
4 1/4	4 3/4
4 1/4	4 1/4
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/4	
4 1/2	
4 1/2	
4 1/2	
4 1/2	
4 1/2	
4 1/2	
4 1/2	
4 1/4	
4 1/2	
4 1/4	
4 1/4	
4 1/4	

Papier part cracked took it off

Personally appeared before me this 13 , the said Chas. A. Edison, Chas. Batchelor, John Kruesi, and Martin Force, and acknowledged the above to be their signature

Notary Public.

Now put on gold with three pin holes [in] the bottom

Rate Bubbles

3 Sec	3 Sec
3	3
3	3
3	3
3	3
3	3
3	3
3	3
3	3
3	3
3	3
3	3
3	3
3	3
3	3
3	3
3	3
3	3
3	3

Now following with 100 ohms in circuit

12 1/4	13	12 3/4
12 1/2	13	13
13 1/4	13	12 1/2
13 1/4	13	12 1/2
13	13	
13	13	
13	12 3/4	
13	11 3/4	
12 1/2	12 1/4	
13 1/4	13	
	13	

Copied on P 185 Vol 4 Exh Rosanoff Apr 9 1879 W Carman

Bubble Voltameter   Sept 13 78   13

Test Electromotive force   TA Edison
Chas Batchelor

3 cell Callaud Small size   100 Ohms Constant
See over   average 13 secs   J Kruesi
Martin Force

3 cell Carbon   100 Ohm Constant

Personally appeared before me this ___ day of ___ 19__, the said Thos. A. Edison, Chas. Batchelor, John Kruesi, and Martin Force, and acknowledged the above to be their signatures.

Notary Public.

Copied on P 186 Vol 4 Exp Records Aug 9 1879 W Carman

3 3/4 Secs
3 3/4
3 3/4
3 3/4
3 3/4
3 3/4
3 3/4
4
4
4
4
4 1/4
4 1/4
4 3/4
4 3/4
4 3/4
4 3/4

4 3/4
4 1/4
4 3/4
5 1/4
5 1/4
5
5
5 1/4
5 1/4
4 3/4
4 3/4
4 1/4
4 3/4

4 3/4
4 3/4
5
5
5
5 1/4
5

Bubble Voltometer

Test to obtain Electric Motive Force of Battery

10 Cells. Callaud Constant — Tardown

Sept 15. 18

14

No Cells	1 Cell	2 Cells	3 Cells	4 Cells	5 Cells	6 Cells	7 Cells	8 Cells	9 Cells	10 Cells
		53	12½	6½	5	4	3 1/10	2¼		
		62	13	6	5½	4	3	2½		
		25	13	6	5½	4	3 1/10	2 3/4		
		61	13	6	5½	4	3 1/10	2 3/4		
		30	13	6	5	4	3 1/10	3		
		57	13	6	5	4½	3 1/10	3¼		
		24	13	6	5	4	3	3		
		55	13	10	5	4	3	3		
		32	13	9½	5½	4	3½	3		
			13	9½	5½	4	3½	3		
			13	9½	5½	4	3½	3		
			13	9½	5½	4	3½	3		
			13	7½	5½	4	3½	3		
				7½	5½	4	3¾	3		
				8½	5½	4	3¾	3		
				8½	5½	4	3.¾	2 3/4		
							3½	3		
							3.¾	3		
							3 3/4	3		
							3½			
							3			
							3			

Small Cells from 7½ to 8

Personally appeared before me this 15 day of Sept 1918 the said Chas. A. Tilton, Chas. Batchelor, John Kvenig, and Martin Stowell and acknowledged the above to be their signatures.

Notary Public.

Charged on Book 63 Page 5 Cost $1.00

Credited

Test Cell

Ex 400 ohm coil (8)

Bubble Voltameter

Test of Gallard Battery Small Size Sept 13 1895 Jardin 9 holes

15

Commutator 100 ohm	1 Cell	2 Cells	3 Cell	4 Cells	5 Cells	6 Cells	7 Cells	8 Cells	9 Cells	10 Cells
5.40	46 1/2	12 1/2	4	5 1/2	4 1/2	5 1/2	2 1/2	2		
	45	12 1/2	4	5 1/2	4 1/2	3 1/2	2 1/2	Burned here, capacity of		
	42	12 1/2	4	5 1/2	4 1/2	3 1/2	3 1/2	this Voltameter exceeded		
	42	12 1/2	4	5	4	3 1/2	3	with 100 ohm		
	42	12 1/2	4	5 1/2	4 1/2	3 1/2	2 3/4			
	41	12 1/2	4	5 1/2	4	3 3/4	3 1/4			
	40	12 1/2	4	5 1/2	4	3 1/2	3 1/4			
	40	12 1/2	4	5 1/2	4	3 1/2	3			
	40	12 1/2	4	5 1/2	4	3 1/2	3			
	40	12 1/2	4	5 1/2	4	3 1/2	3			
	40	12 1/2	4	5 1/2	4	3 1/2	3			
		12 1/2	4	5 1/2	4	3 1/2	3			
		12 1/2	4	5 1/2	4	3 1/2	3			
		12 1/2	4	5 1/2	4	3 1/2	3			
		12 1/2	4	5 1/2	4	3 1/2	3			
		12 1/2	4	5 1/2	4	3 1/2	3			
		12 1/2	4	5 1/2	4		3			
		12 1/2	4	5 1/2	4		2 1/2			
		12 1/2	4	5 1/2	4		Bad			

Chas Batchelor
John Mc Donnell
Martin Dowd

Personally appeared before me this day of 189 , the said Thos. A. Edison, Chas. Batchelor, John Kennell, and Martin Dowd and acknowledged the above to be their signatures.

Notary Public.

Copied on page 186 Book V. Exp. Discussion Sept 11 1895 J. T. Cannon

Voltameter Sept 14. 78

Porous Diaphragm — T A Edison

Paper — to soft — has a tendency to break it when wet

Gold Beaters Skin — Better but softens by use and becomes useless.

Cork — No better

Celluloid ~~Cast~~ — Stopped up the hole top of the cell and fixed a Celluloid face to the cell with hole at top & bottom thus ⊙ — Thus collects the gas in the top of the cell — This also prevents the escape of small bubbles from the face of platina disc.

after trying as above records more seen

Witnesses
C A Bateheler
John Frost
Monroe Mee

Laughed on Page 187 Vol X Exh Records Oct 8 1878 M Carrington

Personally appeared before me this 13 day of Oct. 1878, the said Thos. A. Edison, Chas. Batchelor, John Frost, and Martin Mee and acknowledged the above to be their act.

Notary Public.

17

T. A. EDISON.

Menio Park, N. J., Sept 16th 1878

Voltameter.

T. A. Edison

Cellulid

Platina Plate

Charles Batchelor
Martin Force

Personally appeared before me this day of
12 the said Thos. A. Edison,
Wm. Batchelor, John Krouse, and Martin Force,
and acknowledged the above to be their signatures

Notary Public.

Disposition of 1 Vol & Exp Records
Over 9.1.79 C. McEuen

Bubble Voltameter Sept 16. 78

T A Edison

After instrument working over night — found heavy blackish deposit on the negative electrode. possibly from the Carbon rod (Solution Hydrochloric Acid) -

~~[illegible]~~

Used fine platina wire in place of the Carbon rod -

Result was the more even [illegible] off of gas at negative pole probably this is comes from the fact that the wire gives of its oxigen with more regularity than the Carbon

Charles Batchelor
Admiral Porter
Martin Merry

Copied on P. 190 Vol 9 Bookmarks
Dec 9. 1878 M Cannon

Personally appeared before me this 6th day of
10 , the 6th Chas. A. Tomlin,
Chas. Batchelor, John Krouse, and Charles Porter,
and acknowledged the above to be their signature

Notary Public.

Bubble Voltameter

Sept 19th 98 19

To Edison Right

Constructed a tube Voltameter to make comparative test with Bubble Voltameter to ascertain degree of accuracy

Chas Batchelor
Edison Lamp Works
Martin

Tube Voltameter

of Cells = 2' 1½" = 2' 1½" = 2' 1½" = 2' 1½" = 2' 1"
3 " = 6' 6½" = 6' 6½" = 6' 6½" = 6' 6½" = 6' 6½" = 6' 8"

Bubble Voltameter

of Cells = 16" - 16" - 14½ - 14½ - 14 3/4 - 14½" - 14½ - 14½
3 " = 46½" - 46½" - 48" → 46 - 46 - 46 46 46 45½ - 45½ - 45 3/4

2. 52½

Personally appeared before me this day of 19 the Subscribers Chas. Batchelor, John Kruesi, and Martin Owen, and acknowledged the above to be their signature

Notary Public.

121 3/4 121 1/2 121.1

Applied on Page No. 4 Book Memorandum 1880 120 Martin

112

Time	2.32	2.34	2.37	2.39	2.25	2.40	2.38½	2.36	2.36	2.47
Tube	Aspen	4	4½	4½	4	4½	4½	4	4	4 3/4
Bubble	Bubble	5	5	5	5	5	5	5	5	5

21

Radiation of Heat.

Witness
J. Hunter
Martin M. Force

Source of Heat	Direct Radiation	Liquid introduced in Aerophore	Radiation	Per Cent Returned
Gas jet	20-0°	4.	55°	
" "	20-0°	9.	65°	

Personally appeared before me this day of 19 , the said Thos. A. Edison, Chas. Batchelor, John Ericsson, and Martin Force, and acknowledged the above to be their signature

Notary Public.

Entered on Page 21 Vol. 4
Exp. Record Oct 9. 1911
M Pearson

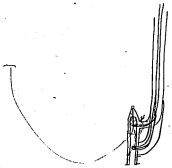
Senorans Petitioners Sept 21st 1898

J. Krouel

Chas Batchelder

J. de Elesa

Martin Ferrel



Personally appeared before me this day of 19 the said Thos. A. Fitzroy, Chas. Batchelder, John Krouel, and Martin Ferrel, and acknowledged the above to be their signature

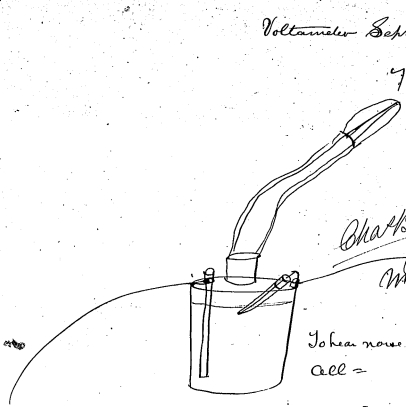
Notary Public.

Copies on page 191 Court Book Roscommon Oct 9. 1895 P O'Connor

22

Voltameter Sept 27. 1878

T A Edison



Chas Batchelor
J Kruesi
Martin Force

To hear noise on decomposition
all =

Personally appeared before me this 10 day of Chas. Batchelor, John Kruesi, and Martin Force, the said Chas. A. Edison, and acknowledged the above to be their signatures

Notary Public.

Copied on page 194 Vol 4 Exp Researches
Oct 9, 1878 O O Parmen

#4

Sept 27 1878

T.A.E.

Reflecting Thermometer

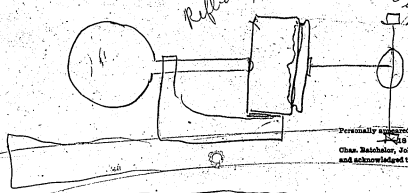
T.A.E.

Martin Force

Johnson

E.B. Cornwall

M. M. Force

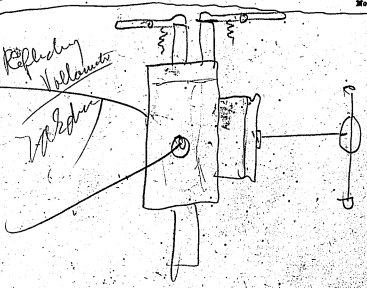


Personally appeared before me this day of 1878, the said Thos. A. Edison, Chas. Batchelor, John Kruesi, and Martin Force, and acknowledged the above to be their signature

Notary Public.

Reflecting Voltameter

T.A.Edison



T. A. EDISON.

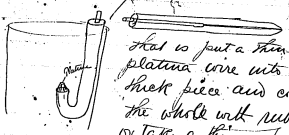
Voltaic

Sept 30, 1879

Menlo Park, N. J., 187

Mr Ricci

Will you have made immediately the following:— instead of the platina coming out of side of rubber electrode in this instrument make one this way:



that is put a thin platina wire into the thick piece and cover the whole with rubber, or take a thinner piece of wire all through and cover with rubber and then bevel off the end so that only the extreme end is seen and then warm rubber & bend round like sketch afterwards I wish you would burnish the end of platina so that the wax will not stick to it Ch. Johnson